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DIGITAL THREADS: ANALYZING THE EFFECTS OF TECHNOLOGICAL INTERVENTIONS ON INDIA'S IKAT ARTISAN ECONOMIES

Shivv Dhar

Step by Step School, Noida, India

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ABSTRACT

Historically, the Indian handloom sector has experienced a curious trajectory, from a tradition dating back thousands of years to a craft that severely suffered under British rule. Despite the importance attributed to hand-spun swadeshi cloth during the Indian independence movement, many weavers are barely able to make ends meet today. This has been compounded further by the advent of the digital age and internet technologies. Recognizing this, several technological interventions have been deployed in India's ikat artisan economies during the 21st century. This spans from the Digital Empowerment Foundation (DEF), its flagship program Digital Cluster Development Programme (DCDP), alongside other notable organizations like Microsoft and Tata Trusts. Hence, this paper analyzes the effects of these interventions on India's primary ikat hubs. Examining qualitative and quantitative data surrounding the impact of digital interventions on these communities, it will shed light on how digitalization can empower weavers within the handloom ecosystem, increase their wages, reduce the dominance of middlemen, and equip them with greater agency in the marketplace. This paper will also critically evaluate the approach taken by these interventions, its impact on the livelihood of weavers, and lastly, discuss the broader effects of digitalization within the context of a capitalist paradigm.

Keywords: Digital Empowerment Foundation, Digital Cluster Development Programme, Handloom

1. Introduction

Indian handlooms are intertwined with a legacy that dates back thousands of years. From the days of the Indus Valley civilization until the introduction of industrial looms in the 19th century, weaving was an important source of livelihood passed down over the course of many generations. While the craft suffered under British rule, it was believed that the transition to an

ISSN: 2455-8834

Volume:08, Issue:10 "October 2023"

independent nation post-1947 and the decade's Swadeshi ideals, which elevated the importance of hand-spun cloth, would ultimately restore the status of the Indian weaver (Chatterjee, 2015, p. 34). Sadly, the state of the handloom industry today suggests otherwise.

Owing to globalization, industrialization, and the rise of mass-produced goods, India's artisan communities face a web of challenges in the new millennium. This ranges from poor wages, inability to compete with cheap imitations, the dominance of middlemen, and insufficient information about markets and current trends. Despite such setbacks, handloom products still appear to enjoy a special status in the market. This is evidenced by the recent Handloom Census, which noted a significant uptick in the production of cloth (Ministry of Textiles, 2019). However, the same data also revealed that despite an increase in demand, Indian weavers were actually worse off than before. In fact, the overall number of weavers decreased by an alarming 19% in the span of a decade—from 43.31 lakhs in 2009–10 to 35.25 lakhs in 2019–20.

One key reason behind this phenomenon can be attributed to the lack of digital skills among traditional artisans. Digitalization, or the use of digital technologies in business, offers a sizable advantage in today's markets. It can not only improve revenue but also generate value-producing opportunities, streamline processes like designing, archiving, and marketing, and remove the barriers between weavers and buyers.

Perhaps recognizing this, many digital interventions have been deployed in the handloom sector during the 21st century. This is especially the case for ikat hubs in Odisha and Telangana, which will be analyzed in this paper. By examining the available quantitative and qualitative data surrounding digitalization in these clusters, this paper aims to shed light on the scope and impact of technological interventions in India's artisan economies.

2. Background

Ikat is one of the oldest forms of weaving. It involves resist dyeing the yarns that create a distinct pattern on the fabric when woven. Though there is little physical evidence, it is widely accepted that India has been producing ikat for centuries. Archeological evidence from Mohenjodaro dating back to the third millennium BC and the Ajanta cave frescoes from the 5th and 6th centuries suggest that one of the three ikat categories—single ikat—was already known in India back then (Livingston, 1994, p. 160). Today, three states—Gujarat, Odisha, and Telangana—are known as ikat hubs in the country (Chatterjee, 2022). In Telangana, which was previously a part of Andhra Pradesh, Pochampally is one of the main production centers. In Odisha, Sambalpuri is considered the heartland of ikat. Yet, other areas in Odisha, like Barpali and Nuapatna, are also renowned for their weaving clusters.

ISSN: 2455-8834

Volume:08, Issue:10 "October 2023"

From the 1950s onwards, many attempts were made to help ikat economies succeed in a rapidly modernizing world. To uplift Odisha's ikat economies, the government launched state organizations and initiatives like Boyanika, Utkalika, and the Sambalpuri Bastralaya (Meher, 2017). In the 1960s, the All Indian Handicrafts Board stepped in to train Pochampally weavers in silk weaving (MAP Academy Encyclopedia of Art, 2022). While these efforts might have helped sustain ikat in the past, the advent of the digital age means that ikat weavers now face a new set of challenges. Moreover, as Ithurbide and Singh (2022) observe, the recent COVID lockdown has "triggered a massive digitalization movement," due to which online services have gained greater relevance than ever before, a landscape that poses several challenges for weavers (p. 2).

Historically, ikat clusters are located in rural communities, which Internet service providers do not view as a profitable segment. As a result, they are unaware of the benefits of internet connectivity or how it can improve their livelihoods. Moreover, many weavers have little to no skills in navigating the digital world, meaning they often miss out on the benefits that come along with it. Relying on middlemen for their digital skills isn't a viable option either, as Das (2021) evidences in his survey on the socio-economic conditions of Sambalpuri handloom weavers. After analyzing the cluster, he found that relying on middlemen for marketing meant that the benefits were also going to middlemen rather than weavers. Despite this, many weavers continue to depend on other agents in both supply and demand contexts. This ranges from sourcing raw materials and designs to selling the product, as well as managing the customer base. This "tiered" distance between weavers and customers is the main reason handloom workers do not see much profit even when there is demand for their products (Majumdar et al., 2021, p. 54).

In the 21st century, concerns like this have led to a wave of digital interventions to empower ikat economies. This primarily includes the Digital Empowerment Foundation (DEF), which began in 2002 to provide wireless internet connectivity to remote locations in India. DEF collaborates with entities such as the United Nations, Bill and Melinda Gates Foundation, Sir Dorabji Tata Trust, Google, and Microsoft, among others. Its flagship program, the Digital Cluster Development Programme (DCDP), is focused on empowering India's handloom clusters through digital interventions. Two of its main aims are providing low-cost internet connectivity through the Wireless for Communities program (W4C) and digital literacy and inclusion programs.

3. Discussion

Several scholars (Humbe & Bhalerao, 2018; Loebbecke & Picot, 2015) have outlined the need for digital empowerment in the handloom sector. Mamidipudi (2012) highlights how the "ensemble of knowledge, skills, technology, and social relations" involved in handloom weaving indicates that the craft itself can be recontextualized as a "socio-technology" with immense

ISSN: 2455-8834

Volume:08, Issue:10 "October 2023"

scope for digital interventions (p. 41). Before digitizing attempts were made by the DCDP, a baseline survey of Pochampally was conducted, demonstrating just how far removed ikat artisan communities are from the digital world.

Upon surveying access to internet services, findings revealed that a staggering 95% of the respondents did not have an internet connection, and only 6% had a family member who had undergone computer training (Digital Cluster Development Programme, n.d.). There is, however, a clear demand for digital literacy since 68% of respondents reported needing computer training, and 92% said they wanted a computer center available in the locality. In Odisha too, "poor access to digital devices, electricity, and high-speed internet" were reported as the reasons digital adoption was scarce (Majumdar et al., 2021, p. 56).

Over the years, initiatives like the W4C have played a major role in enabling internet access across Pochampally, Barpali, and Nuapatna. But access alone does not translate to digital empowerment. Equipping weavers with the skills needed to incorporate digitalization in the processes of designing, archiving, and marketing is also crucial. Hence, it is a step in the right direction that DEF's intervention addressed digital empowerment in Barpali and Nuapatna through a "three-pronged" approach that involved improving digital access, digital education, and digital engagement (Majumdar et al., 2021, p. 52). DEF also launched Digikala, a project supported by Microsoft to digitally transform the two clusters in Odisha. This meant expanding digital literacy, enabling government support, creating self-help groups, executing the W4C project, and creating a design archive for the cluster.

By 2017, it was reported that digital training was given to 2,000 individuals at Barpali and Nuapatna while 25 members from each weaving family were trained in using advanced design software (Manzar, 2017). As a result, Barpali and Nuapatna tripled household incomes in just six years. However, the impact of technological interventions is more apparent when comparing Barpali and Nuapatna during different stages of the Digikala project. As Majumdar et al. (2021) note, when the Nuapatna cluster was in the "nascent" stage, the average monthly household income for a family of 6 to 10 members was ₹1,500–3,000 (p. 55). However, Barpali, which was in the "intermediate" stage by then, had an average monthly household income of ₹6,000–8,000 for 6 to 10 family members. These numbers are significant, as according to the 4th Handloom Census, 67.1% of weaving households across India still make less than ₹5,000 (Ministry of Textiles, 2019).

Insights into the impact of digitalization can also be sourced from qualitative data. Supplementing numerical evidence with weavers' first-hand experiences of digitalization allows for a more holistic analysis of digital interventions. In 2015, the Weavers' Digital Resource Centre was established by DEF in Barpali. One of the first in the community to enroll here was

ISSN: 2455-8834

Volume:08, Issue:10 "October 2023"

Bidyabati Meher, who hails from a family of weavers. After taking a digital literacy course, she noted the impact of digital interventions, saying:

After my exposure to computers and the internet, I realized how little weavers know about the outside world, including the market for which we make sarees. This lack of information, besides poor direct access to the market, has been the reason for our exploitation (DEF India, 2017).

Here, Bidyabati is not only able to clearly identify the gaps and challenges her community faces, but she also demonstrates a well-rounded awareness of the weaving ecosystem. Now, she is part of a mobilization team that promotes the adoption of digital tools in her community. Such networks are especially useful in reaching women, who have fewer opportunities to access digital tools, and ultimately help ensure "digital equality" for all social groups (UN Women, 2022, p. 4).

Like Bidyabati, Sudhanshu Mohan Das, who comes from a family of weavers in Nuapatna, was also affected by the lack of direct access to the market. In 2018, Antaran, a Tata Trusts initiative, held interventions for artisans like him to equip them with skills and connect them directly to buyers rather than having to go through middlemen, thus "making the craft remunerative across the value chain" (Tata Trusts, 2020). In 2019, Sudhanshu joined the Antaran program. Before this, he was weaving silk ikat sarees with the Maniabandha weft technique. However, his earnings were not enough to sustain his household, and Sudhanshu was already looking for alternate sources of income. After joining Antaran, he attended educational sessions on design, communication, business, and marketing. During the onset of the COVID lockdown, Sudhanshu finally overcame his inhibitions towards social media and learned how to harness the benefits of e-marketing. He started posting on Instagram in July 2020 and eventually grew a sizable following by giving them a glimpse into the world of traditional Maniabandha weft ikat sarees. He says:

The Antaran sessions taught me to photograph my products in different ways, using different angles and shots that would make the sarees really stand out (Tata Trusts, 2020).

The same year, he also reported fielding an average of two inquiries a day about his products. While the experiences of Bidyabati and Sudhanshu highlight the positive impact of digital intervention, there is still a need to evaluate digitalization as a whole by situating its effects within the larger capitalist paradigm.

Today, e-commerce has led to an increasing dependency on digital marketplaces, the Internet, and social media. Some researchers have raised concerns about this reorganization, or rather the artist-entrepreneur dynamic itself, where the number of tasks they need to perform has multiplied and diversified to non-cultural tasks (Improta, 2018; Ithurbide & Singh, 2022). This is the case

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Volume:08, Issue:10 "October 2023"

for ikat weavers too, where the functions of a "photographer, client relation manager, brand designer, digital marketing agent" seem to have become a prerequisite to sustain their handloom business in increasingly competitive and volatile markets (Ithurbide & Singh, 2022, p. 3). Future research could build on the economic and psychological implications of this shift in order to aid researchers and policymakers in the fields of digital empowerment and indigenous art forms.

4. Conclusion

Digital interventions have the potential to transform the handloom sector. They can directly connect the core handloom worker to the end buyer as well as help streamline their business processes, which can significantly improve livelihoods. The analysis of quantitative and qualitative data in this paper aims to provide insight into the impact of technological interventions on the ikat artisan economies of India.

After examining the role of DEF, its partner institutions, and their initiatives in ikat clusters, it is clear that digital interventions must go beyond merely providing digital access. They also need to empower weavers to better understand, utilize, and execute these technologies. Additionally, the paper offers an analysis of weavers' experiences to arrive at a deeper understanding of the relationship between digitalization and artisan communities.

While digital interventions have largely had a positive impact on handloom clusters, it is worth noting that there is also a need to critically evaluate the emancipatory dialogue surrounding digital technologies. Examining its implications within the economy and the lives of weavers can foster a more comprehensive and interdisciplinary approach to digital technologies in the future.

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